

Claims

- [c1] 1. A multiple group of blades for an integral covered nozzle of a turbine comprising:
 - multiple blade foils;
 - multiple respective cover portions defining a first surface configured to span tips of multiple adjacent blades between tip locations of adjacent blades thereby to form the cover portion portions for adjacent blades and wherein the cover portions associated with each respective adjacent blades include facing sides for adjacent cover portions of adjacent blades; and
 - an overcover coupled to a second surface opposite said first surface of said respective cover portions, said overcover configured to at least one of stiffen deterministic constraints of said tips and seal against leakage through said facing sides for adjacent cover portions.
- [c2] 2. Blades as claimed in claim 1 wherein each of said multiple respective cover portions include a tenon extending therefrom and through an aperture configured in said overcover.
- [c3] 3. Blades as claimed in claim 2 wherein said tenon is one of peened, welded, and brazed with respect to said over-

cover.

- [c4] 4. Blades as claimed in claim 1 wherein said overcover is configured having a thickness less than each of said multiple respective cover portions.
- [c5] 5. Blades as claimed in claim 1 wherein said overcover is one of welded and brazed to said second surface of said multiple respective cover portions.
- [c6] 6. Blades as claimed in claim 5 further comprising: a material buildup on at least one facing side of the cover portions, the material buildup having been machined to develop an interface between adjacent cover portions of adjacent blades.
- [c7] 7. Blades as claimed in claim 6 wherein the material buildup is applied by a selectively mechanical or metallurgical action on both facing sides of the cover portion.
- [c8] 8. Blades as claimed in claim 7 wherein the material buildup is applied between cover portions on all adjacent blades thereby to effect integral covered blading.
- [c9] 9. Blades as claimed in claim 6 including a selectively applied underweld or underbrazing between a cover portion and a blade tip thereby to effectively secure the cover portion to the blade.

[c10] 10. A method of constructing equivalent integral covered blading for a turbine having multiple blades supported by a stator comprising:

attaching multiple blade foils with multiple respective cover portions on a first surface thereof configured to span tips of multiple adjacent blades between tip locations of adjacent blades and wherein the cover portions associated with each respective adjacent blades include facing sides for adjacent cover portions of adjacent blades; and

coupling an overcover to a second surface opposite said first surface of said respective cover portions, said overcover configured to at least one of stiffen deterministic constraints of said tips and seal against leakage through said facing sides for adjacent cover portions.

[c11] 11. The method as claimed in claim 10 further comprising:

disposing a tenon extending from each of said multiple respective cover portions, said tenon extending through an aperture configured in said overcover.

[c12] 12. The method as claimed in claim 11 further comprising one of:

peening;

welding; and

brazing said tenon with respect to said overcover.

- [c13] 13. The method as claimed in claim 11 further comprising:
configuring said overcover having a thickness less than each of said multiple respective cover portions.
- [c14] 14. The method as claimed in claim 10 wherein said overcover is one of welded and brazed to said second surface of said multiple respective cover portions.
- [c15] 15. The method as claimed in claim 10 further comprising:
positioning said blades adjacent to each other and applying a material buildup on at least one facing side of the cover portions of said adjacent blades;
machining the material buildup thereby developing develop an interface between adjacent cover portions for each of said adjacent blade; and
replacing the blades in the rotor after said coupling an overcover thereby forming equivalent integral covered blading.
- [c16] 16. The method as claimed in claim 15 wherein the material buildup is applied by a selectively mechanical or metallurgical action on both facing sides of the cover portions.

- [c17] 17. The method as claimed in claim 15 wherein the material buildup is applied between cover portions on all adjacent blades thereby to produce the effect of an integral cover.
- [c18] 18. The method as claimed in claim 11 including the applying selectively an underweld or underbrazing between a cover portion and a blade tip thereby to effectively secure the cover portion to the blade.
- [c19] 19. The method as claimed in claim 15 wherein the material buildup extends beyond a circumferential outerface of the cover and a circumferential innerface of the cover, such extensions being subject to subsequent machining.